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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/475,526	12/30/1999	CHARLES R. YOUNT	042390.P6602	6450

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EXAMINER

KENDALL, CHUCK O

ART UNIT

PAPER NUMBER

2122

DATE MAILED: 04/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/475,526

Applicant(s)

YOUNT ET AL.

Examiner

Chuck O Kendall

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 30 December 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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DETAILED ACTION

1. This action is in response to the application filed 12/30/99

Claims 1-20 have been examined.

Claim Rejections - 35 USC § 112

Claims 15, & 19 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Crossover operation as disclosed on page 5 line 1 of applicants disclosure does not provide a definition or a description of the term.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1-4,6-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Sivakumar et al. USPN 6,031,990 hereinafter Sivakumar.

Regarding claim 1 Sivakumar shows executing routine to generate at least one test program; [2:55-57, generate is interpreted as creating test programs form prior art], analyze the test program; [9:65-67 to 10:1-5], and generate at least one subsequent test program until at least one termination criterion is met. [1:53-63, see pre-execution rules for criterion, and descendants for subsequent testing].

Regarding claim 2 system of claim 1, further comprising: a population of data stored in a storage device. [2:3-5]

Regarding claim 3 system of claim 2, wherein a portion of the population is replaced. [1:60-63]

Regarding claim 4 executing program instructions for generating test program, [9:29-32, see create tests] and evaluating the test program based upon coverage data, [9:65-67 to 10:1-5, see coverage code], and using the evaluation to select a new test program. [10:27, see pick and choose test cases for execution].

Regarding claim 6 system of claim 3, wherein the population has not reached the desired size, the method further comprising, (e) creating an abstract representation of a functional test program.[2:63-65].

Regarding claim 7 system of claim 6, wherein the abstract representation is translated into a functional test program. [3:1-5, see test case and test hierarchy]

Regarding claim 8 system of claim 7, further comprising: (f) executing at least one test program; [10:27, see pick and choose test cases for execution]. and (g) generating coverage data, [9:65-67 to 10:1-5, see coverage code].

Regarding claim 9 system of claim 8, further comprising:

(h) Storing abstract representation and corresponding coverage data into a storage device. [5:10-13, see storing information on test class (same as abstract)].

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Regarding claim 10 system of claim 9, wherein if desired coverage has not been achieved, operations (a) through (h) are repeated.[6:35-40, see continues to traverse hierarchy if tests fails, traversing hierarchy consists of the same steps as previously as used to test data as cited in previous claims, also 9:50-54 for reuse].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 11-13, 16-18, & 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sivakumar et al. USPN 6,031,990 hereinafter Sivakumar in view of Slutz USPN 6,138,112.

Regarding claim 5 Sivakumar discloses all the claimed limitations as applied in claim 3. Sivakumar doesn't explicitly disclose determining whether a population has reached a desired size of the population. However, Slutz does disclose this feature. [6:45-52]. Therefore, one of ordinary skill in the art at the time the invention was made would have been motivated to modify Sivakumar with Slutz's limitation to implement the above invention because determining the size or parameter of data ensures consistency between test data and program data being tested.

Regarding claim 11 Sivakumar discloses using the genetic operation to create at least one new test program, executing the new test program(s), measuring coverage data, and placing the new test program(s) and coverage data into the population. Sivakumar doesn't explicitly disclose determining whether a population has reached a desired size of the population using a first and second logic. However, Slutz does disclose this feature. [6:45-52]. Therefore, one of ordinary skill in the art at the time the invention was made would have been motivated to modify Sivakumar with Slutz's limitation to implement the above invention because determining the size or parameter of data ensures consistency between test data and program data being tested.

Regarding claim 12 system of claim 11, wherein the genetic operation is a mutation; and choosing one test program based upon coverage. [1:40-43, see creating tests based on input data, also see claim 16, as interpreted]

Regarding claim 13 system of claim 12, further comprising: replacing a portion of the population. [10:27, see pick and choose test cases for execution, also see 1:60-62]

[10:27, see pick and choose test cases for execution, also see 1:60-62], wherein the genetic operation is a crossover operation, and choosing two test programs.

Regarding claim 16 Sivakumar discloses filling the abstract syntax tree with application-specific node types, [Fig 1] translating the abstract syntax tree into an application-specific test program, [3:1-5, see test case and test hierarchy] executing the test program by the computer processor and generating coverage data, [5:42-45] and placing the abstract syntax tree and corresponding coverage data into a population.[see collection of tests]. Sivakumar doesn't explicitly disclose determining whether a population has reached a desired size of the population using a first and second logic. However, Slutz does disclose this feature. [6:45-52]. Therefore, one of ordinary skill in the art at the time the invention was made would have been motivated to modify Sivakumar with Slutz's limitation

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to implement the above invention because determining the size or parameter of data ensures consistency between test data and program data being tested.

Regarding claim 17 the method of claim 16, wherein choosing a genetic operation further comprises: choosing a mutation operation.[1:40-43, see creating tests based on input data, also see claim 16, as interpreted]

Regarding claim 18 the method of claim 17, further comprises: choosing at least one abstract syntax tree; and replacing a portion of the coverage data. [10:27, see pick and choose test cases for execution, also see 1:60-62]

Regarding claim 20, see claim 16 for reasoning.

Correspondence Information

Any inquiries concerning this communication or earlier communications from the examiner should be directed to Chuck O. Kendall who may be reached via telephone at (703) 308-6608. The examiner can normally be reached Monday through Friday between 8:00 A.M. and 5:00 P.M. est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, *Greg Morse* can be reached at (703) 308-4789.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

For facsimile (fax) send to 703-7467239 official and 703-7467240 draft

Chuck O. Kendall

Software Engineer Patent Examiner
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PRIMARY EXAMINER